AMENDMENTS TO THE CLAIMS

Please replace all prior versions and listings of claims with the following listing of claims.

1. (Currently Amended) A method for manufacturing a functional layer, comprising:

introducing a substrate into a process chamber;

generating a plasma by a DC plasma cascade source;

depositing a first deposition material on the substrate under the influence of the plasma, wherein, at the same time, applying a second deposition material to the substrate with a second deposition process,

wherein the functional layer has no catalytic function and forms a coating selected from the group consisting of anti-reflective, heat-resistant, and optical coatings, and

wherein a volatile compound of the first deposition material is supplied from outside the process chamber to the plasma for the deposition.

2. (Previously Presented) A method according to claim 1, wherein the first deposition material is supplied to the plasma outside the plasma source in the process chamber.

3. (Cancelled)

4. (Previously Presented) A method according to claim 1, wherein the volatile compound contains a precursor material which decomposes the first deposition material in the process chamber before the first deposition material has reached the substrate.

5. (Previously Presented) A method according to claim 1, wherein the second deposition process is PECVD, CVD, PVD, sputtering, hollow-cathode sputtering, vapor deposition using boats, e-beam, and/or supported by an ion process, ion plating, microwave deposition, ICP (inductive coupled plasma), parallel-plate PECVD, and/or honey comb electrode structures.

6. (Previously Presented) A method according to claim 1, wherein a sputtering electrode comprising the first and/or the second deposition material is arranged in the process chamber, wherein the plasma is brought into contact with said sputtering electrode to sputter the substrate with the first and/or the second deposition material of the electrode.

7. (Previously Presented) A method according to claim 6, wherein the plasma is passed at least partly through a passage of the sputtering electrode to contact the plasma with the electrode.

8. (Previously Presented) A method according to claim 7, wherein the sputtering electrode contains compressed powders of the first and/or second deposition materials to be deposited on the substrate.

9. (Previously Presented) A method according to claim 1, wherein the substrate comprises sheet material.

10. (Previously Presented) A method according to claim 1, wherein the substrate is moved in the process chamber at least in such a manner that each time a different part of the substrate contacts the plasma.

11. (Previously Presented) A method according to claim 1, wherein the substrate is brought from an environment into the process chamber and is discharged from the process chamber to the environment while the deposition material is deposited on the substrate in the process chamber.

12. (Previously Presented) A method according to claim 1, wherein the substrate is substantially non-porous and comprises a metal or plastic.

13. (Previously Presented) A method according to claim 1, wherein the substrate comprises a carrier material.

14. (Previously Presented) A method according to claim 1, wherein the substrate comprises a metal and/or an alloy.

15. (Previously Presented) A method according to claim 1, wherein the substrate comprises corrugated material.

16. (Previously Presented) A method according to claim 1, wherein the substrate is substantially porous.

17. (Previously Presented) A method according to claim 1, wherein the first and/or second deposition material is deposited such that the chemical composition of the deposited material measured over distances of 5 cm.

18. (Previously Presented) A method according to claim 1, wherein the substrate is adjusted to a particular electrical potential by DC, pulsed DC and/or RF biasing.

19. (Previously Presented) A method according to claim 1, wherein the substrate is adjusted to a treatment temperature.

20. (Currently Amended) An apparatus for manufacturing a functional layer on a substrate, comprising:

a process chamber;

a DC plasma cascade source configured to generate a plasma;

a first deposition material source configured to introduce a first deposition material into the plasma;

a substrate positioning device configured to bring and/or keep at least a part of a substrate in such a position in the process chamber that the substrate contacts said plasma;

a second deposition material source configured to deposit a second deposition material on the substrate at the same time as the plasma source, wherein the functional layer has no catalytic function and forms a coating selected from the group consisting of anti-reflective, heat-resistant, and optical coatings; and

a fluid supply channel configured to supply the first deposition material to be deposited, in a volatile state, from outside the process chamber to the plasma.

21. (Previously Presented) An apparatus according to claim 20, wherein the second deposition material source is a VD source, including a CVD source, a PVD source, or a PECVD source.

22. (Previously Presented) An apparatus according to claim 20, wherein the second deposition material source is configured to carry out deposition processes including: PECVD, CVD, PVD, sputtering, hollow-cathode sputtering, vapor deposition using boats, e-beam, and/or supported by an ion process, ion plating, microwave deposition, ICP (inductive coupled plasma), parallel-plate PECVD, and/or honeycomb electrode structures.

23. (Previously Presented) An apparatus according to claim 21, wherein the second deposition material source comprises a sputtering electrode containing the first and/or the second deposition material to be deposited, wherein the sputtering electrode is positioned such that, during use, the plasma generated by the plasma source sputters the first and/or the second deposition material from the sputtering electrode onto the substrate.

24. (Previously Presented) An apparatus according to claim 23, wherein the sputtering electrode is arranged downstream of the plasma source and is provided with a plasma passage to allow the plasma to pass from the source to the substrate.

25. (Previously Presented) An apparatus according to claim 23, wherein the sputtering electrode abuts the plasma source.

26. (Cancelled)

27. (Previously Presented) An apparatus according to claim 20, wherein the sputtering electrode is provided with the fluid supply channel.

28. (Previously Presented) An apparatus according to claim 20, further comprising two DC plasma cascade sources configured to generate two plasmas, wherein the two DC plasma cascade sources and the substrate positioning device are positioned such that, during use, opposite sides of the substrate contact the

plasmas generated by the two DC plasma cascade sources to deposit material on the opposite sides of the substrate.

29. (Previously Presented) An apparatus according to claim 20, further comprising a substrate supply roller and discharge roller, respectively, configured to supply and discharge, respectively, a substrate that can be rolled up to and from the process chamber, respectively.

30. (Previously Presented) An apparatus according to claim 20, wherein a wall of the process chamber is provided with a passage to pass the substrate into and/or out of the process chamber.

31. (Previously Presented) An apparatus according to claim 30, wherein at least a part of the passage f the process chamber wall is bounded by oppositely arranged feed-through rollers configured to engage a part of the substrate disposed between them during use, for feed-through of the substrate.

32. (Previously Presented) An apparatus according to claim 29, further comprising a deformation means member configured to deform the substrate which has unrolled from the supply roller.

33. (Previously Presented) An apparatus according to claim 32, wherein the deformation member is configured to corrugate and/or serrate the substrate.

34. (Previously Presented) An apparatus according to claim 20, wherein the first and/or second deposition material is vapor deposited on the substrate.

35. (Previously Presented) An apparatus according to claim 20, further comprising a separate sputtering source configured to sputter material onto the substrate.

36. (Previously Presented) A method according to claim 1, wherein the first deposition material is ZnS and the second deposition material is SiO_2.

37. (Previously Presented) A method according to claim 1, wherein the first deposition material is MgF_2 and the second deposition material is TiO_2.